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THE EFFECTS OF A SPORTSMANSHIP CURRICULUM INTERVENTION ON GENERALIZED POSITIVE SOCIAL BEHAVIOR OF URBAN ELEMENTARY SCHOOL STUDENTS

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This study evaluated the effects of an elementary physical education curriculum in which development of positive social skills, including leadership and conflict-resolution behaviors, was the primary focus. A second goal was to determine possible generalization effects beyond the primary intervention setting. Students in two urban elementary physical education classes served as subjects, with a third class used as a comparison. The effects of the curriculum intervention were evaluated in the training setting and in the students' regular education classrooms using a multiple baseline across classrooms design. Results showed (a) an immediate increase in student leadership and independent conflict-resolution behaviors, (b) an increase in percentage of class time devoted to activity participation, and (c) decreases in the frequency of student off-task behavior and percentage of class time that students devoted to organizational tasks. Similar changes in student behavior were also observed in the regular classroom settings.

DESCRIPTORS: sportsmanship, social behavior, conflict resolution, urban education, disadvantaged children

Public school inclusion of curricula that are specifically designed to teach conflict management is especially important to contemporary society given the growing incidence of violence among our children and youth (Leitman & Binns, 1993). It is well documented that social competence with peers also plays an important role in child and adolescent development and in related educational success (Kennedy, 1988). From a larger cultural perspective, antisocial children are overrepresented in groups that are characterized by alcoholism and drug addiction, unemployment, divorce, and dependence on public assistance when they are adults (Caspi, Elder, & Bem, 1987). The development of positive social behavior is, therefore, a current topic of grave concern among many communities and schools (Calfee, 1987).

It is well documented that adult positive social behavior is associated with the social dimensions of childhood school performance (Lambert & Nicoll, 1977; Parker & Asher, 1987; Wentzel, Weinberger, Ford, & Feldman, 1990). Wentzel (1991) suggests that the development of citizenship skills and moral character

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is causally related to public education experiences, and that subject-matter learning is related to behaving responsibly and socially in the classroom.

Currently, public school teachers often have to assume a larger role in the social development of their students due to the decline in influence of traditional socializing agents such as church and family (Muscott & Gifford, 1994). Greater involvement by the public school teacher has also been fueled by the increasingly violent and unsafe nature of the public school setting (Juvenile Justice Bulletin, 1989; Leitman & Binns, 1993). The active teaching (as defined by Colvin & Sugai, 1988) of social behavior in public school physical education classes may be one potential means to reduce the problems correlated with poor social skills and antisocial behavior.

It has been hypothesized that promoting good sportsmanship in the context of sports-related activities facilitates the development of social skills (Bredemeier & Shields, 1987, 1993; Weiss & Bredemeier, 1990). This hypothesis stems from the highly interactive, competitive, and inherently conflict-oriented character of team sports and the resulting need for either participant or external sources of resolution. It is further hypothesized that the social character of team sport settings may be measured by increases in students' independent leadership and conflict-resolution behaviors, greater percentages of time spent in the activity to be played, efficient organization, and reduced incidences of off-task behaviors.

Operating on the assumption that successful behavior management is essential to children's and youths' educational and social success (Gettinger, 1988), several curricula with an emphasis on social skills exist in the physical education literature (e.g., Austin, 1978; Caine & Krebs, 1986; Meakin, 1981; Park, 1983). Unfortunately, only qualitative evidence exists to date to support their use (Bredemeier, Weiss, Shields, & Shewchuk, 1986; DeBusk & Hellison, 1989). Precise behavioral examples of positive social interaction in general, and sportsmanship in particular, are needed to assess the effects of curricula on encouraging and maintaining positive social behavior.

Positive social behavior in the context of good sportsmanship has been defined as leading the behaviors of peers in a productive direction, working and playing cooperatively, and resolving peer conflict without adult or authoritarian intervention (Kohlberg, 1963; Wandzilak, 1985). Although social instruction is increasingly being recognized as an important aspect of public school education, a number of factors have hindered empirical documentation of its effects. These include (a) definitional challenges (Kroll, 1975; Siedentop, 1976, 1980), (b) measurement difficulties (Raths, Merrill, & Simons, 1978), (c) research design demands (Giebink & McKenzie, 1985), (d) implementation challenges (Wandzilak, 1985), and (e) the lack of a large empirical literature to support instructional models that teach social values development (Romance, Weiss, & Bockoven, 1986).

A series of studies by Horrocks (1977, 1979, 1980) and the work of Romance et al. (1986) provide examples of the social development literature related to public school settings. Through the use of self-report, these studies demonstrated a positive correlation between student moral reasoning and positive social patterns of play in elementary education settings when multiple instructional interventions with superordinate reasoning goals were present. Based on Kohlberg's (1963) sequential development model of moral reasoning, Wandzilak (1985) designed one of the few existing physical education social curricula. Intended primarily for competitive sport settings, this model has been applied to male junior high school basketball players (Wandzilak, Carroll, & Ansorge, 1988). Although no effects were found based upon a pre- and postintervention defining issues Likert scale (Rest, 1979), the authors recommended further study of possible changes in athletes' daily behaviors (e.g., encouragement, support, leadership, and congratulatory behav-

Table 1
Subject and Setting Characteristics

	Class 1	Class 2	Class 3
Number of students	14 males 12 females	16 males 13 females	15 males 15 females
Ethnic background	5 Caucasian 4 black 9 native American 3 Asian 5 Hispanic	7 Caucasian 5 black 9 native American 2 Asian 6 Hispanic	6 Caucasian 6 black 11 native American 3 Asian 4 Hispanic
Mean family income	$8,548.00	$7,946.00	$9,355.00
Number of students on school lunch program	17	15	16
Number of single parent households	11	13	15
Number of students below the 50th academic percentile (CAT)	16	15	17
Average daily discipline referrals	4	3	3

iors) as a function of social instruction. Giebink and McKenzie (1985) have documented the effectiveness of social instructional interventions with preadolescent males in physical education and recreation settings. Findings revealed that interventions were more effective in softball than in basketball activities, and that the most successful intervention was a point system that included tangible reinforcement.

Although the above examples point to the possible effectiveness of social instruction in physical education settings, research is needed to determine the teacher behaviors that promote social skills and the degree to which social skills may generalize beyond the primary training setting. The goal of this study was to specify the components of an ongoing social curriculum in a public school setting and to monitor its effects on student behavior. Specifically, we exposed students to a behaviorally based social curriculum model, tracked its effects in the gymnasium in which it was implemented, and assessed behavior changes in the classroom that may have been attributable to the gymnasium-based intervention.

METHOD

Subjects and Setting

Students in three third-grade physical education classes were chosen as subjects due to their similar background, characteristics, and similarly poor social skills as evidenced by the average number of daily discipline referrals (see Table 1). Mean ages for each class were 8 years 3 months (Gym 1), 8 years 2 months (Gym 2), and 8 years 4 months (Gym 3). Classes were held in a moderately equipped gymnasium of an urban school that served students of low socioeconomic status within a large metropolitan school district. Students were characterized by a predominantly low academic achievement history, diverse ethnic mixture, and large percentage of single-parent households. The students exhibited a wide range of sport-related physical ability. Two classes were chosen at random to receive positive social instruction and the third class served as a control.

Regular education classes for each group were also monitored for generalization effects of social instruction in the gymnasium. Each regular ed-

ucation class followed a cooperative learning strategy in which students operated primarily in small groups with designated student leaders who encouraged group interaction on a common academic problem. The three physical education classes and the two regular education classes in which the students participated were taught by the same physical education teacher and elementary education specialist, respectively.

Design

The social intervention was implemented in two gymnasium classes using a multiple baseline across classes design with an extended nonverbal prompting of treatment phase after each second baseline.

General Procedure

The social curriculum and all other physical education instruction were conducted in the context of team sport activities (i.e., softball, floor hockey, soccer, basketball, and flag football) taught in a 45-min block 3 days per week (Monday, Wednesday, and Friday). Each class also received fundamental movement and sport-related skill instruction on the two remaining days of each week during the 45-min class time set aside for physical education instruction (Tuesday and Thursday). Gym Class 1 was exposed to the social curriculum with the second team sport activity introduced, Gym Class 2 was exposed with the third activity, and Gym Class 3 remained unexposed. Developmentally appropriate activity units were matched across all three gym classes. The portion of the regular education classes used for observational purposes consisted of a 45-min cooperative learning session held each afternoon.

Treatment

Social instruction was implemented on every activity day (i.e., Monday, Wednesday, Friday) of each intervention phase, with each phase lasting 6 weeks. In addition, Gym Class 1 received a second 1-day intervention phase on Day 30. Social instructional procedures were based in large part on the documented effectiveness of Greenwood, Terry, Arreaga-Mayer, and Finney's (1992) classwide peer tutoring interventions and Hellison's (1985) theoretical advocacy of teaching self-responsibility at an early age to encourage life-long social skills.

Specific intervention procedures included:

1. Five minutes of talk by the teacher at the beginning of each intervention day, defining objectives of teacher-independent sport conflict resolution, lack of off-task behavior, and increased peer leadership and support behaviors in the context of active participation in a team sport.

2. Verbal definition by the teacher of the following general social characteristics in talks before and after class: (a) *good winners:* the absence of bragging, taunting, and so on, and the occurrence of positive and supportive feedback toward opposing team members; (b) *good losers:* the absence of peer accusations and negative blaming behavior and the occurrence of positive congratulatory behaviors; (c) *peer respect:* the absence of negative peer interactions with student referees and designated team leaders and the occurrence of referee and team leader supportive behaviors; (d) *enthusiasm:* the absence of negative peer comments to other peers engaged in the activity and the occurrence of peer encouragement and positive feedback behaviors; (e) *content effort:* the absence of competent bystander behavior (i.e., student movement within an ongoing activity without demonstration of the skills involved in that activity) and the occurrence of active participation; (f) *conflict resolution:* resolving game activity conflicts without teacher help; and (g) *peer helping and organization:* occurrence of peer instruction and support in skill content and organizational tasks.

3. On a rotating class roster, preactivity designation of (a) 2 students with shirts and whistles to function as referees throughout the team sport to be played, (b) 2 students to function as activity team captains who were charged with the supervision of all organization and student preparation required for that activity (e.g., team division and organization, equipment organi-

zation, citing rules of play, etc.), and (c) teacher refrain from intervention in all conflicts arising from the activity played for a 2-min minimum to observe changes in students' ability to resolve conflicts independently of adult guidance.

4. Verbal feedback and written recording of a team-by-team teacher evaluation of the social characteristics listed in Item 2 were conducted at the end of each intervention day. Written records consisted of assigning a positive or negative score to each of the seven general social characteristics based on either a larger positive or negative frequency count of these behaviors for each team. Each social characteristic that received more negative than positive instances on the frequency tabulation was listed once in the minus score column, and each that received more positive instances was listed in the plus column. A total score for each team was calculated as the sum of the column scores and ranged from −7 to +7 for that day. The 5-min postclass talk session included specific feedback regarding recommended social behavior change for the next activity class, based on the minus scores for that day.

Teacher behaviors were monitored for each of the 32 data-collection days to ensure similarity within and across classes (with the exception of overt social instruction in the gymnasium on treatment days). General teacher activities in evidence included organizational and skill-related interaction, observational behaviors, and encouraging and interpersonal interactions. On intervention days, the physical education teacher monitored and prompted the students as minimally as necessary, to allow for accurate social curriculum assessment.

Baseline and Nonverbal Prompting Conditions

During all initial baseline phases, no instructions were given to the physical education teacher concerning the resolution of student conflicts when they arose. In addition, the social instructional treatment was not used.

The nonverbal prompting phase was identical to baseline conditions with the exception of nonverbal cues used by the teacher when necessary to prompt social behaviors in peer conflict situations (e.g., making eye contact with an individual student who exhibited negative social behaviors, physical signals or facial expressions designed to provide an unobtrusive reminder to try to resolve conflict in a positive social manner).

The regular education teacher was not instructed to provide time for students to resolve conflicts in any phase. Control Gym Class 3, all baseline and nonverbal prompting condition phases of Gym Classes 1 and 2, and the respective regular education classes were monitored to ensure that no teacher verbally mentioned social instruction, even in the context of necessary disciplinary action (necessary disciplinary action was defined as peer conflict escalating in severity longer than 2 min).

Data Collection

Wednesday of each week for 1 academic year was chosen for data collection because it was representative of the gymnasium and regular education class activities studied. Observations consisted of computer-assisted real-time recording (see Hawkins, Sharpe, & Ray, 1994; Sharpe, Hawkins, & Ray, 1995) of the frequency or duration of target teacher and student behaviors occurring in the 45-min physical education period for each class and in the 45-min regular education class cooperative activity each afternoon. The social coding scheme was derived inductively from observations of teacher and student behaviors within the setting to be studied (see Sharpe & Hawkins, 1992). Definitions of the teacher and student behaviors observed are listed in Table 2.

Frequency and duration data were collected from videotapes by three trained graduate student coders on a NEC-PC® 8300 microcomputer and an IBM® ThinkPad 350C, using appropriate collection and analysis software (Sharpe, 1994). Cameras were placed unobtrusively in the classroom on the 1st day of the academic year and were well hidden by bleachers and classroom partitions. Written informed consent

Table 2
Behavior Definitions and Mean Interobserver Agreement Percentages (Ranges in Parentheses)

Behaviors	Definitions
Teacher	
Observation 93 (90–97)	The teacher is observing the whole class or some portion thereof. This category includes all general scanning and specific student monitoring. Other teacher behaviors may not be ongoing to record this category.
Organization 91 (88–94)	Explanation of activity rules, directing set-up and managerial routines, and dividing student groups in preparation for skill content activities.
Teacher directed 93 (90–97)	The teacher is personally providing the organizational material.
Pupil directed 89 (88–92)	Pupils (either designated referees or other students) provide organizational directions as the teacher observes.
Skill content 94 (89–98)	Using verbal, modeling, or physical guidance procedures, the teacher provides specific information regarding student performance on a particular component of an activity.
Explanation 92 (85–94)	Occurs prior to a student practice attempt, and is usually very detailed.
Feedback 89 (84–96)	Occurs after a student response during a practice attempt, and is usually in the form of a short prompt.
Interpersonal 93 (88–98)	Teacher interaction with student on topics unrelated to the organizational task, skill content, or social curriculum focus.
Social feedback 94 (89–97)	The teacher provides specific feedback regarding student social conduct. This may occur as detailed instruction or as short prompts. Examples include, but are not limited to, student organization, effort, enthusiasm, sharing of responsibility, argument, referee ability, good winners, and good losers.
Other 92 (93–98)	Teacher behavior does not belong in any of the above categories. Examples include time spent with paperwork at desk, time spent in conversation with classroom visitors, etc. Category is designed to equate each observational episode.
Student	
Preparation 92 (84–96)	Students are actively engaged in the routines necessary to prepare for skill attempts and game play (e.g., moving into groups, setting up materials or equipment, etc.).
Skill engagement and game play 97 (92–100)	Students are actively engaged in the actual subject-matter activity. This may include wait time involved within a particular activity, such as center fielder anticipation in baseball, or field-of-play travel in soccer or basketball.
Listening 94 (91–98)	Students are listening to a teacher, peer leader, or student referee concerning organizational, subject matter, or interpersonal information.
Waiting 92 (84–96)	Students have completed an activity, are clearly between activities, and are awaiting the next activity or opportunity to respond.
Off task 96 (89–100)	Students are clearly not engaged in an activity in which it is clear they should be engaged in, or are engaging in an activity other than the one clearly advocated by the teacher, peer captain, or student referee (e.g., behavior disruptions, misusing materials, fighting, etc.).
Conflict 94 (91–99)	Two or more students are involved in a disagreement over organizational tasks, skill performance, the rules of a large group activity, the correct outcome of a game activity play, or an interpersonal dispute in the context of an activity. This can include physical contact, vocalizations, or repeated nonverbal gestures.
Social response[a] 92 (89–97)	A student or student group makes a verbal or nonverbal response to another student, peer captain, or student referee's instructional, organizational, or conflict resolution directive in the context of a game activity.
Following behavior 93 (86–97)	A student simply complies with the particular student, peer leader, or student referee directive.

Table 2
(*Continued*)

Behaviors	Definitions
Leadership behavior 91 (84–95)	A student emits a verbal or nonverbal response clearly designed to facilitate, help direct, or support an appropriate social response.
Conflict resolution[a] 93 (87–96)	This category records whether the teacher intervened in student conflict situations, indicating whether students are able to resolve disputes independent of teacher help.
Teacher assisted 94 (89–97)	The teacher intervenes in disputes between students, peer captains, and student referees to bring an issue to resolution.
Teacher independent 92 (90–99)	Students come to conflict resolution without the aid of the teacher.

[a] These behaviors are not mutually exclusive across categories. For example, although a conflict incidence must be recorded as either teacher assisted or teacher independent and following or leadership, respectively, teacher independent and leadership often occurred in concert and were therefore concurrently recorded.

was obtained from all gymnasium and classroom participants.

Frequency counts were taken for the student behavior categories of conflict and related leadership and independent conflict resolution as well as off-task behavior. We report a frequency measure for off-task behavior because the duration of each individual off-task event remained within a relatively narrow range throughout all experimental settings and phases (first baseline M = 47 s, range, 35 to 63 s; treatment M = 49 s, range, 28 to 58 s; second baseline + nonverbal prompting + maintenance M = 46 s, range, 29 to 55 s), and because incidence versus nonincidence of off-task behavior was our primary focus in measuring this potential effect of the social curriculum.

Percentage of class time was recorded for the categories of skill engagement and organization based on 5-min recordings of randomly selected students. For these two target behaviors, students were first randomly assigned to one of four groups. Observations of each group were rotated contiguously across days throughout the experiment. Observations of students within the group scheduled that day were rotated sequentially in 5-min blocks for the entire class period (Thomson, Holmberg, & Baer, 1974).

Observer Training and Agreement

To train observers, frequency and duration measures were calculated for a 90-min criterion tape depicting the various behavior categories. Data collectors were then trained to a criterion of $\geq$.85 agreement for three successive observations of randomly selected 10-min segments of the videotape. Interobserver agreement was assessed on 1 day of each experimental phase (i.e., five checks for each of the three gym settings and five checks for each of the two regular education class settings equally distributed across classes and phases of the experiment) by comparing two independent but simultaneous observations of the same videotaped observational episode (Kazdin, 1982). Cohen's (1960) kappa was used to assess reliability of frequency and duration data with each agreement procedure.[1] Coefficients for observer training and interobserver reliability were .92 (range, .88 to .97) and .94 (range, .89 to .98), respectively.

[1] The computer-based data-collection apparatus provided printouts of frequency, mean duration, percentage of observation time, and rate for all events contained in the observation system. Using the kappa formula, $k = (Po - Pc)/(1 - Pc)$ (Kazdin, 1982), frequency of each event and percentage of class time for each event data were used in assessing agreement, although in some cases only frequency data are represented in the results section and in some cases only percentage-of-class-time data are displayed. For duration, the quotient for each event was rounded to the nearest whole integer, with each >integer deviation counted as an occurrence missed and each <integer deviation counted as a nonoccurrence missed. In this manner, Cohen's kappa was considered to be amenable to assessing agreement on continuous data forms.

Interobserver agreement means and ranges for each category are listed in Table 2.

RESULTS

Frequency of conflict in gymnasium and classroom settings remained relatively constant across all experimental phases due to the similar form and character of the team sport played, the similarity of activities observed in all classroom situations, and the tendency for student conflicts to involve the same 10 to 12 students. All teacher behavior and setting characteristics were similar across baseline and intervention phases of the experiment with the exception of (a) implementation of the social curriculum in intervention phases and (b) provision by the physical education teacher of time for students to resolve conflicts in all phases after the initial baseline.

Gymnasium Data

Figure 1 represents the three gymnasium classes on the dependent measures of (a) frequency of student leadership and independent conflict resolution in the context of total frequency of student conflicts (note that these are not mutually exclusive codes; refer to the definitions contained in Table 2) and (b) frequency of off-task behavior. Figure 1 shows an increasing trend for student leadership. The number of student leadership behaviors for Gym Classes 1 and 2, respectively, increased from baseline means of 2.0 and 1.9 to 7.2 and 8.0 during the intervention. Similarly, the mean number of conflicts resolved independently increased from 0.5 and 0.7 during baseline to 5.8 and 6.7 during the intervention. Student leadership and independent conflict resolution behaviors remained stable for the untreated control gym class (M = 2.7 and 1.2, respectively). In addition, off-task frequency decreased as a function of the intervention. Mean off-task incidents for Gym Classes 1 and 2, respectively, decreased from baseline means of 13.2 and 13.8 to 6.7 and 5.7 during the intervention. Off-task behavior remained stable for the untreated control gym class (M = 13.7).

Immediate trend reversals for leadership, conflict resolution, and off-task behavior were observed in each class's second baseline phase. A similar, albeit more gradual, return to baseline trend was evidenced in each class's nonverbal prompting phase. However, the 1-day intervention on Day 30 for Gym Class 1 resulted in an effective positive change in the indicated direction. This suggested that a social instructional review procedure was necessary to maintain the behavior changes demonstrated in the intervention phase.

It may be argued from the data in Figure 1 that changes in student leadership and independent conflict resolution behaviors were confounded with changes in teacher resolutions of student conflict in the gym. However, Table 3 provides evidence that, with the exception of overt social instruction and the behavior categories of other and resolution of conflict, teacher behaviors remained relatively stable across conditions and instructional settings. Teacher resolution of conflict and other behaviors inherently varied as part of the treatment, in that (a) during intervention phases the teacher refrained from resolving conflicts to permit observation of possible treatment effects and (b) other behaviors naturally consumed a larger portion of class time when the teacher was not devoting time to social instruction or the resolution of student conflict.

Figure 2 depicts changes in the percentage of gymnasium time that students devoted to skill engagement and organization tasks. The increases in amount of gymnasium time devoted to skill engagement and the decreased amounts of time devoted to organization point to the social curriculum's effectiveness in altering instructionally relevant student behavior in the gymnasium settings in which it was implemented. The percentage of time devoted to skill engagement behaviors by Gym Classes 1 and 2, respectively, increased from baseline means of 25% and 25% to 48% and 51% during the

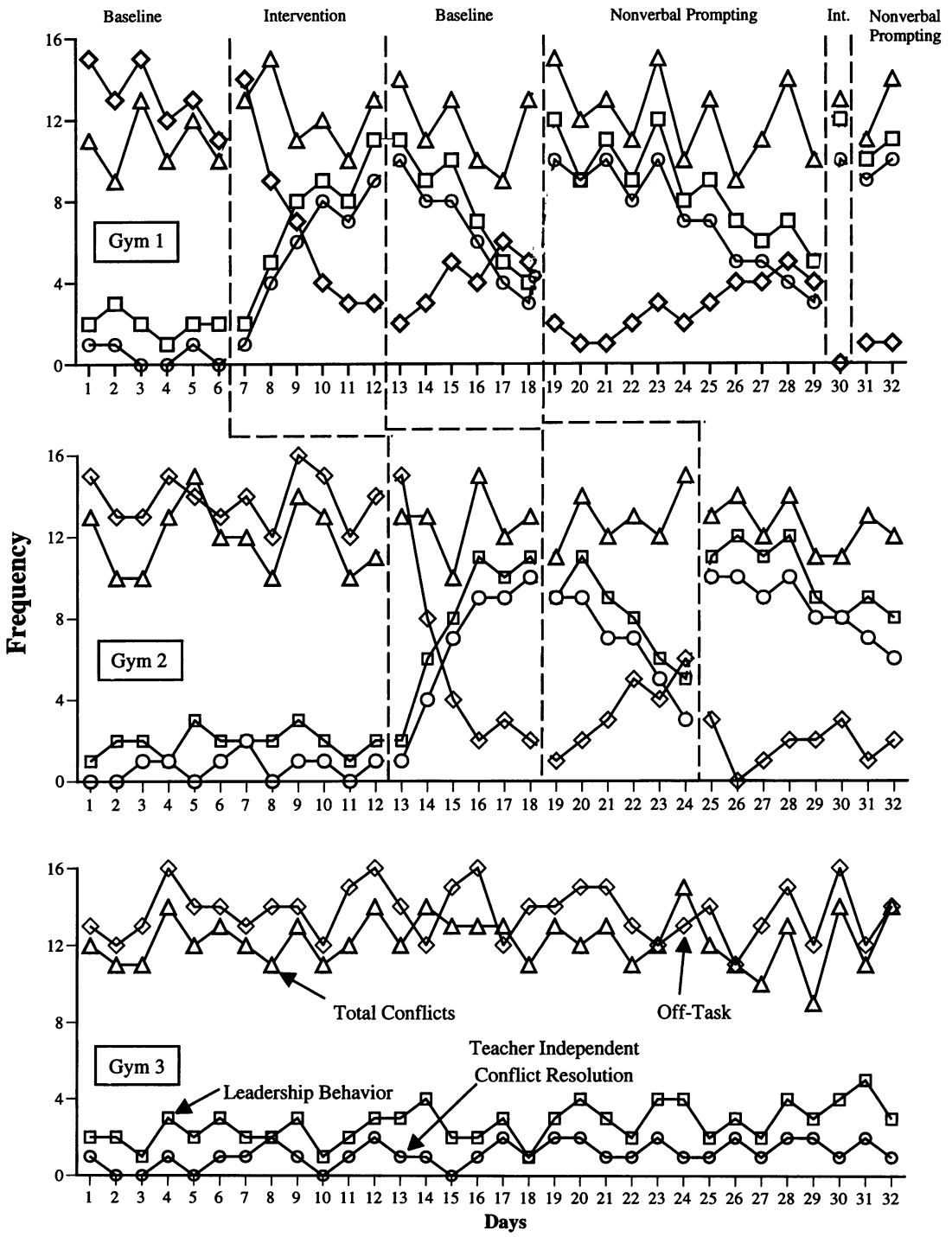

Figure 1. Numbers of student conflicts, leadership behaviors, issue resolutions, and off-task behaviors in gymnasium settings.

Table 3
Mean Percentage of Total Time for Teacher Behavior Across Settings and Conditions (Range in Parentheses)

Behaviors	Gym 1	Gym 2	Gym 3	Class 1	Class 2
Observation					
B	24 (21–29)	26 (22–30)	25 (21–28)	27 (23–31)	25 (22–30)
I	26 (22–27)	25 (20–26)	24 (20–27)	26 (22–28)	24 (21–27)
Total organization					
B	17 (7–21)	18 (6–24)	15 (8–20)	14 (9–18)	16 (10–21)
I	15 (8–20)	16 (7–21)	17 (7–21)	15 (10–17)	14 (10–17)
Resolution of conflict					
B	8 (4–11)	9 (5–12)	8 (6–10)	7 (4–10)	6 (4–9)
I	2 (0–6)	1 (0–5)	7 (5–9)	1 (0–4)	2 (0–5)
Total skill content					
B	24 (19–31)	22 (16–28)	25 (22–33)	23 (17–27)	25 (16–29)
I	22 (18–27)	23 (17–29)	24 (20–28)	25 (19–28)	24 (17–27)
Explanation					
B	14 (8–17)	12 (7–16)	15 (9–20)	14 (8–17)	16 (9–22)
I	12 (8–15)	14 (9–16)	13 (10–17)	15 (11–18)	14 (10–17)
Feedback					
B	10 (5–14)	9 (4–12)	10 (6–13)	9 (5–12)	9 (4–12)
I	9 (5–12)	11 (6–13)	9 (7–12)	10 (6–13)	11 (7–14)
Interpersonal					
B	8 (5–10)	10 (7–12)	9 (7–11)	8 (6–10)	7 (5–10)
I	7 (4–9)	9 (6–11)	10 (6–12)	9 (6–11)	9 (7–12)
Social feedback					
B	1 (0–1)	0 (0–1)	1 (0–1)	0 (0–0)	0 (0–0)
I	21 (19–23)	22 (20–24)	0 (0–0)	0 (0–0)	1 (0–1)
Other					
B	25 (21–28)	23 (20–26)	25 (20–28)	28 (23–31)	25 (21–28)
I	6 (3–9)	2 (0–5)	24 (21–26)	28 (24–30)	26 (22–29)

Note. B denotes baseline phase means and I denotes intervention phase means across instructional settings. Gym 3's I data were taken during all intervention phases of Gym 1 and 2 in which the treatment was being implemented. The I data of Classes 1 and 2 correspond to the intervention phases of Gym 1 and 2, respectively.

intervention. Similarly, the mean percentages of time devoted to organizational behavior of Gym Classes 1 and 2, respectively, decreased from baseline means of 41% and 41% to 19% and 17% during the intervention. Skill engagement and organizational behavior percentages remained stable for the untreated control gym class (M = 28% and 37%, respectively).

A functional relationship between student behavior change and the intervention is further supported by the concurrent reduction in incidences of off-task behavior (Figure 1). Reduction in off-task behavior suggests that student gym time was redirected from time spent in organizational tasks to engagement in skill activities.

Regular Education Classroom Data

Figure 3 shows the numbers of leadership, independent conflict resolution, and off-task behaviors in the regular education classroom, and Figure 4 depicts percentages of class time spent in skill engagement and organizational behaviors. Data represent the behavior of student groups exposed to the social intervention when engaged in 45 min of cooperative learning activities in their regular education classrooms.

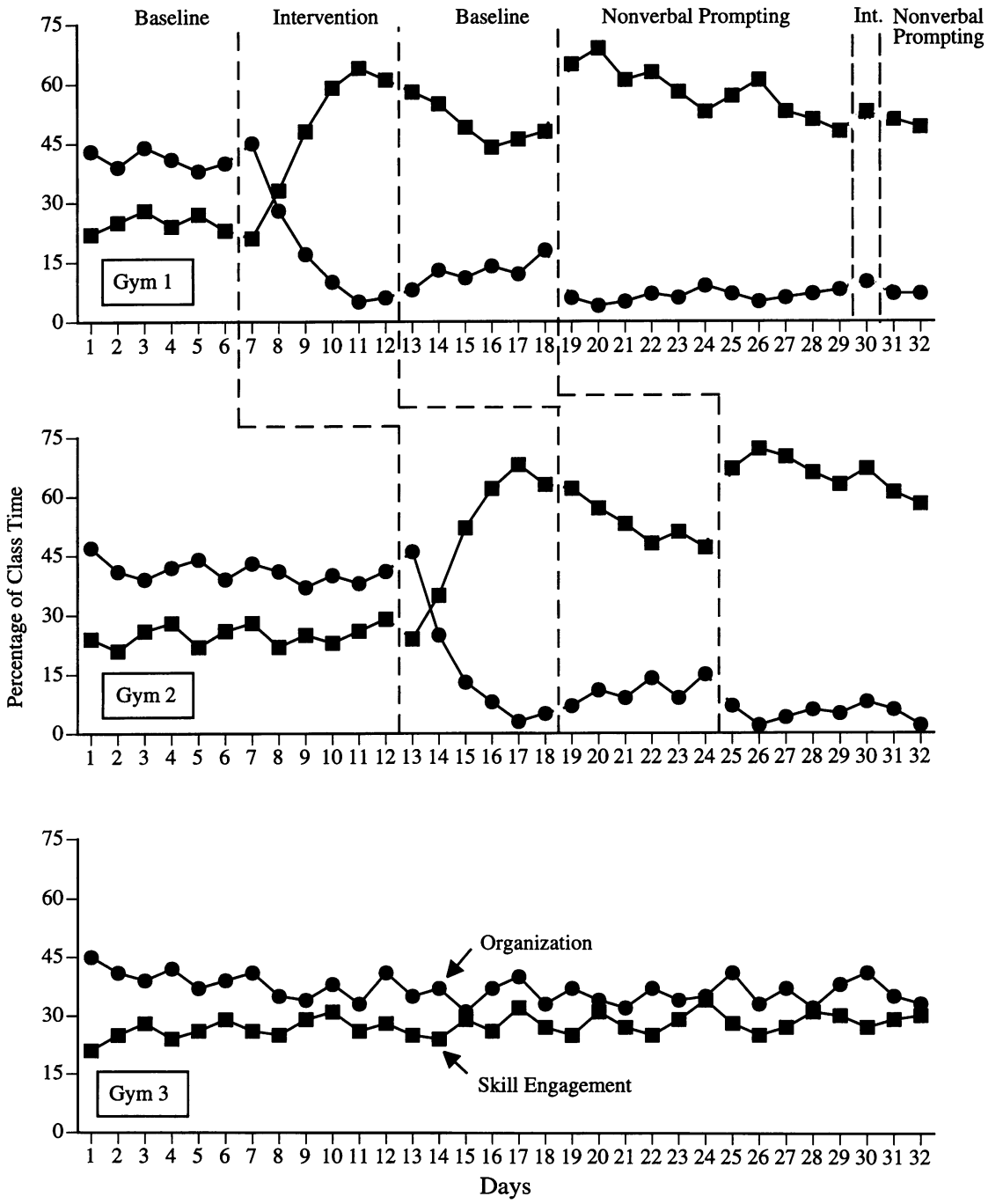

Figure 2. Percentages of class time devoted to skill engagement and organization behaviors in gymnasium settings.

Although the total number of conflicts was somewhat lower than in the gymnasium settings, the data in Figures 3 and 4 clearly mirror those of the primary effects shown in Figures 1 and 2. These data, coupled with the consistency of teacher behavior not related to the treatment across settings and conditions, suggest a functional relationship between the social curricu-

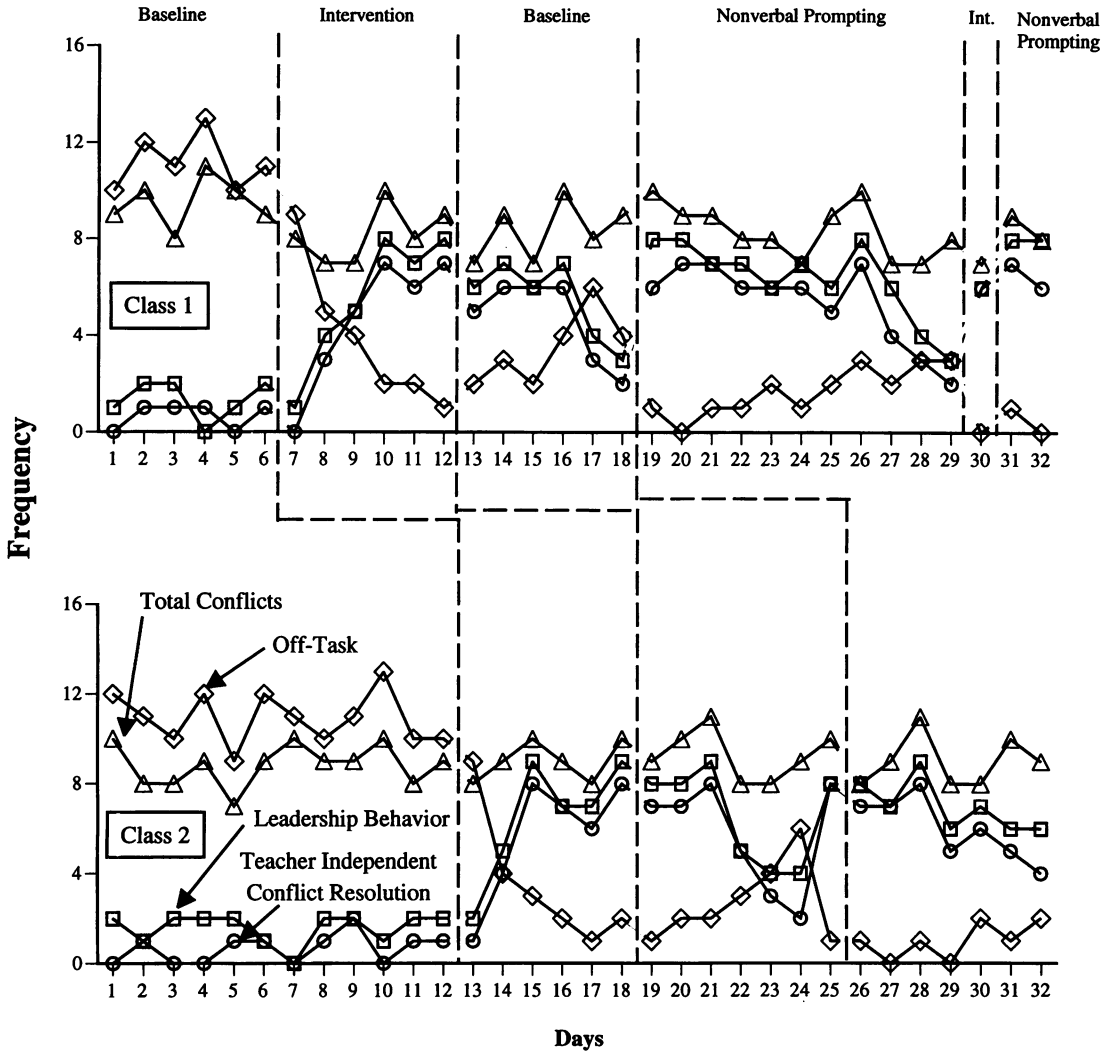

Figure 3. Numbers of student conflicts, leadership behaviors, issue resolutions, and off-task behaviors in regular education settings.

lum and student behavior changes in the regular education classrooms. The classroom data point to the need for further study in determining an optimal instructional cycle for long-term maintenance of the desired social behaviors initially taught (refer to Class 1's 1-day instructional phase on Day 30).

Pearson r *Correlations*

Correlations between the daily social scores determined by the physical education teacher in the intervention phases of the experimental gym settings and the observed frequency of total conflict, leadership, independent conflict resolution, and off-task behavior were calculated. Although social feedback was found to be unrelated to total frequency of conflict, strong correlations were found among sportsmanship team score and leadership behavior (.87, $p < .05$), sportsmanship score and independent conflict resolution (.79, $p < .05$), and sportsmanship score and incidence of off-task behavior ($-.89$, $p < .05$). In other words, as the team score determined by the physical educa-

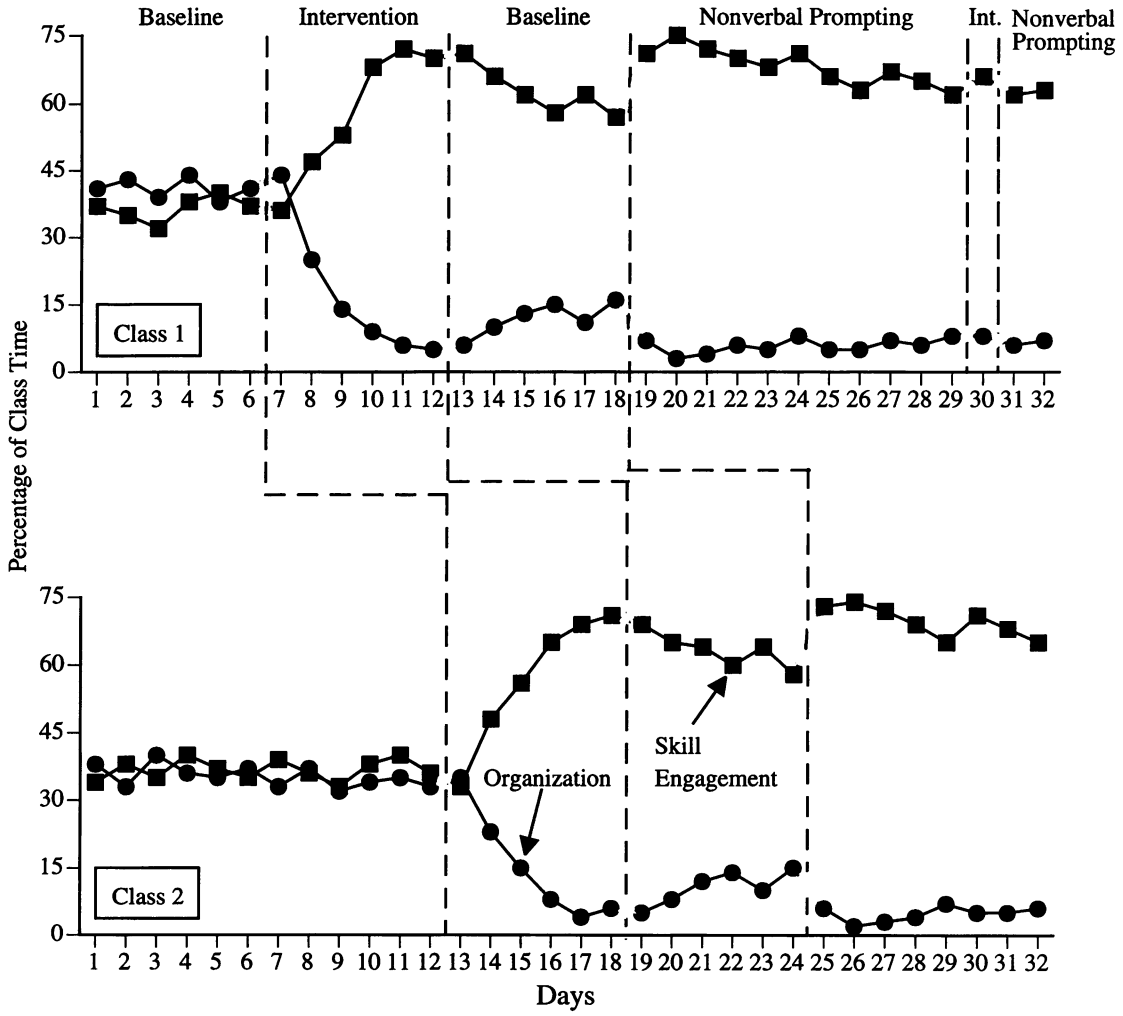

Figure 4. Percentages of class time devoted to skill engagement and organization behaviors in regular education settings.

tion teacher increased, greater percentages of student conflict were resolved independently through peer leadership actions, and incidence of off-task behavior diminished. Conversely, as team sportsmanship scores decreased, conflicts tended to be resolved by the teacher, and there was a greater relative proportion of off-task behaviors.

DISCUSSION

Previous study of the type of curriculum intervention described herein has pointed to the long-term effectiveness of its repeated use in increasing positive social behavior in gymnasium settings (Sharpe, Crider, Vyhlidal, & Brown, in press). Data from this study indicate that elementary school students may be taught to initiate leadership and teacher-independent conflict resolution behaviors in the context of team sport activities, which in turn act to decrease off-task behavior.

A second finding of this study was that social behaviors taught in the gym appeared to generalize to the regular education classroom where large group activities were also ongoing. The repeated trends toward baseline levels for the social behaviors monitored, however, suggest

that these behaviors were likely to be under the control of contingencies contained in the intervention (i.e., feedback, public posting, etc.). The gymnasium data demonstrated that gains in social behavior that occurred when the full treatment package was implemented were lost when only nonverbal cues were used in attempting to maintain them. According to Hake and Olvera's (1978) definition of positive social behavior, it is generalized only when it is maintained by reciprocal contingencies of the social interaction itself, rather than by external reinforcers similar to those used in our instructional treatment package. Further study is warranted to determine if artifacts such as the common social stimuli among groups across similar settings (i.e., public education as opposed to school vs. nonschool, or school vs. home) acted to facilitate generalization.

If one ascribes, however, to the definition of generalization advocated by Stokes and Baer (1977)—the occurrence of relevant behavior (independent conflict resolution and leadership) under nontraining conditions across settings (gym and classroom)—then an argument in favor of generalization across public education settings may be made regarding this instructional package and the target behaviors monitored in the regular education classroom. Support for the view that well-learned social behavior may be displayed beyond the primary training environment has far-reaching social implications, one of which may be reduction in the incidence of violence in children and youth. Given the complexity of behaviors dealt with, one might also logically expect that social behavior may take years of repeated reviews and reinforcement to come under the complete control of natural contingencies. This is in agreement with both DeBusk and Hellison's (1989) and Wandzilak's (1985) hypotheses that several slow-changing value orientations are facilitated when students are exposed to a social instructional program in a sport setting.

Although the only tangible reinforcement (as recommended by Giebink & McKenzie, 1985) used in this study's social curriculum was the team sportsmanship score, the teacher used a combination of antecedent and consequence strategies in the form of pre- and postactivity social instruction. Strict adherence to daily introductory instruction and closing public postings may have been instrumental in producing such strong generalization effects (refer to Chandler, Lubeck, & Fowler, 1992, for a more complete discussion of this issue). However, further study that specifically manipulates the procedural variables of this type of social intervention is necessary to identify the best practices for optimal social-skill generalization across public school settings and beyond. This is particularly salient in light of the fact that reductions in teacher interventions in peer conflict situations and changes in the form and character of social instruction based upon daily student interactions are part of the intervention package.

Empirical documentation of the effectiveness of social interventions with disadvantaged children provides impetus for further study of interventions that are designed specifically to reduce the incidence of socially relevant problems such as violence in our schools and of the contributions classroom teachers can make not only to the development of effective instruction but to the development of socially skilled members of society. Strides in the social development of disadvantaged elementary students may be realized using daily physical education as an instructional vehicle. Providing such instruction in physical education settings is particularly appealing in light of the naturally interactive, conflict-oriented setting that team sports provide. If positive social behavior can be specified and taught at an early age and appropriately generalized, then a powerful academic tool may be available to help to curtail the incidence of unresolved conflict and violence with children and youth. Questions that should next be addressed include: (a) How may we present this curriculum to other teachers to ensure receptivity to implementation? (b) In which other academic

and nonacademic settings is this type of curriculum potentially effective? (c) What are the long-term effects of teaching social behavior in the schools?

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